

**CHAPTER 13**

**SEARCH AND RESCUE**

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## **CHAPTER 13**

### **SEARCH AND RESCUE**

#### **INTRODUCTION**

- Ref:
- (a) IMO/ICAO International Aeronautical and Maritime Search & Rescue Manual, Vols. I & II
  - (b) U.S. National Search and Rescue Supplement to the International Aeronautical and Maritime Search & Rescue Manual
  - (c) National Search and Rescue Plan, 1999
  - (d) Addendum to the National Search and Research Manual (COMDTINST 16130.2B)

Search and Rescue (SAR) efforts primarily focus on finding and assisting persons in actual or apparent distress and are carried out within a well-defined SAR response system as per references (a) – (d). These references have their basis in international law that U.S. SAR services are obligated to follow, and they have practical benefits that are intended to maximize the effectiveness of SAR operations, particularly when working with other military services, SAR authorities of other nations, and with ships or aircraft at sea. When an emergency warrants responses in addition to SAR, the NIIMS ICS organizational structure should be used for overall response management. Examples of other activities that are not SAR, but are often closely associated with a large SAR incident, include search and recovery, salvage, investigation, fire-fighting, pollution response, etc. This chapter describes the ICS organizational structure that will provide supervision and control of essential functions during a major SAR

incident that includes, or will include, other non-SAR activities.

For large incidents that actually or potentially involve both SAR and non-SAR activities, the SAR Mission Coordinator (SMC), who is designated by the SAR response system, will initiate action and coordinate the overall SAR response in accordance with references (a) through (d). When the Incident Commander (IC) is designated, the SMC function will be placed under the umbrella of the ICS organizational structure, typically as the SAR Branch Director or SAR Group Supervisor in the Operations Section. Simply put, the SAR response system “plugs into” the ICS organizational structure, where the SMC (or someone designated by the SMC to carry out this function) serves as the “plug” or link. The SAR response may also include an On-Scene Coordinator (OSC) and an Aircraft Coordinator (ACO). In some cases the person serving as IC or OPS may also be designated as the SMC, but the terms “Incident Commander” or “Operations Section Chief” are not interchangeable with titles associated with SAR response functions. For the majority of incidents, the SAR response will be completed/suspended by the time the ICS structure is fully in place. As the SAR mission winds down and other missions take precedence (i.e., search and recovery), the IC may designate the OSC in the SAR response system to also serve as a Branch Director or Group Supervisor in the ICS structure to manage on-scene operations other than SAR. Likewise, Search and Rescue Units (SRUs) may also be reassigned to other groups in the ICS structure once the SAR mission is concluded. In general, Coast Guard personnel with SAR responsibilities should receive sufficient ICS training to

enable them to carry out their respective duties in ICS response organizations.

**SEARCH AND RESCUE BEST RESPONSE**

**KEY AREAS TO A SUCCESSFUL SAR RESPONSE**

Success of response operations can often be found in how well the management team focused on key response areas. ICs and their Command and General Staff should consider, if applicable, the following key response areas during a search and rescue operation.

**OPERATIONAL**

Response Standard  
Search Planning & Operations  
Rescue Planning & Operations  
Medical/Triage  
Fire Fighting  
Shoreline Search & Recovery  
On-Water Search & Recovery

**SUPPORT/COORDINATION**

Safety  
Stress Management  
Liaisoning with Victim’s Families  
Security  
Investigations  
Resources  
Political  
Assisting & Cooperating Agencies  
Public Information  
Command Post Needs

ICs and their Command and General Staff need to closely monitor how well the incident objectives, strategies, and tactics are addressing the key response areas identified above and adjust, as necessary, to ensure the maximum potential for the best possible response.

## **SEARCH AND RESCUE INCIDENT SCENARIO AND MODULAR ORGANIZATION DEVELOPMENT**

**MODULAR DEVELOPMENT** - A series of examples of modular development are included to illustrate one method of expanding the major airline crash incident organization.

**INITIAL RESPONSE ORGANIZATION (MAJOR AIRLINE CRASH)** - The SAR Mission Coordinator (SMC), either at the Group Commander or the District Commander level, initiates emergency response actions and designates the best-qualified and most capable person or unit on-scene as OSC. The SMC may also designate an ACO to manage air assets on-scene if there are too many for the OSC to effectively manage or communications between surface and air assets prove challenging. The first to arrive on scene would likely be USCG vessels and aircraft, police/fire boats, fishing vessels, and hosts of recreational boats. The FAA will have established air space restrictions and issued the appropriate Notice to Airmen (NOTAMs). The cognizant Group Commander or District Commander may be designated the IC, at which time the SMC function is placed under the umbrella of the ICS organizational structure. Rescue and emergency medical treatment will take priority during this phase. Recovery and identification of the deceased, accident investigation, and cleanup will take priority later in the incident. Initial responders will be heavily involved in the rescue, triage, and transportation of survivors. An IO is immediately assigned to provide initial information to the media and establish a JIC. CERT and/or CISM support should be considered early.

See Page 13-10 for an example of the initial response organization.

**REINFORCED RESPONSE ORGANIZATION (MAJOR AIRLINE CRASH)** - An ICP is established and initially staffed with personnel from the Coast Guard; local, state, and federal law enforcement and emergency response/management agencies; and local medical institutions/organizations. The JIC should be staffed for 24-hour operations, if need be. A LO is also designated to coordinate the large numbers of responding and interested government agencies and public organizations. The SO is assigned to assess the situation and develop a Site Safety Plan. The NTSB and the FBI may be added to the UC upon their representative's physical arrival on-scene.

The OPS is designated to manage the growing number of operational activities (e.g., SAR, medical care, security, and evidence collection). This may be the Group Commander if the District Commander assumes the role of IC. The following Groups are established to organize the operational activities:

- The SAR Group continues to carry out the SAR response under the function of the SMC. Additional surface and air assets have arrived from different jurisdictions. Tactical control of some or all of the response assets may be shifted to the SAR Group for tasking by the OSC or ACO.
- The Medical Group, supported heavily by local EMS and hospital personnel and resources, coordinates triage and treatment areas, as well as transporting survivors. A Patient Transportation Unit may be established to efficiently move survivors from the staging/triage

areas to medical facilities.

- The Law Enforcement Group begins the task of securing the scene; providing shore-side security for staging areas and the ICP, establishing evidence collection and control; and conducting the investigation. In this case, the NTSB may have primary investigative responsibilities. If terrorism was suspected, the FBI would take the lead. NTSB and FBI representatives brief the UC concerning their needs regarding investigation and recovery operations. A Traffic Control Unit may be needed to keep tremendous number of shore-side curiosity seekers from impairing the access of EMS/rescue personnel to critical Staging Areas.
- An Air Tactical Group Supervisor may be designated to coordinate assignments and air assets and manage air tactical activities.
- Consideration should be given to establishing a Demobilization Unit.

See Page 13-11 for an example of the reinforced response organization.

**MULTI-DIVISION/GROUP ORGANIZATION (MAJOR AIRLINE CRASH)** - The UC and Command Staff are functional and fully staffed. The District may be designated as the Coast Guard IC to be on the same level as the NTSB and FBI representative(s). The Group Commander may assume the role of OPS, if he or she has not already done so. Deputies from the fire, law enforcement, and emergency medical service agencies could assist the OPS. The Rescue, Medical, and Law Enforcement Groups are fully developed. The rescue is nearly complete, if not already completed, and the operation is shifting to search and recovery of

bodies and aircraft debris. Surface and air assets are shifted to other groups, such as the Search and Recovery and Law Enforcement Groups.

The focus of the UC's efforts is shifting to the NTSB and law enforcement agencies, including city/county/state coroner. A Body Recovery Team has been added and is working closely with the coroner who has jurisdiction. An Underwater Recovery Group has been initiated and may be led by the Navy or other qualified agencies. The FBI, NTSB and local/state law enforcement agencies are coordinating the investigation and recovery of wreckage.

The JIC continues to be fully staffed. Additional assets may be needed to accommodate the political dignitaries and next of kin that would want to view the accident site or have direct briefings from the Command Staff. See page 3-12 for an example of the Multi-Division/Group Organization.

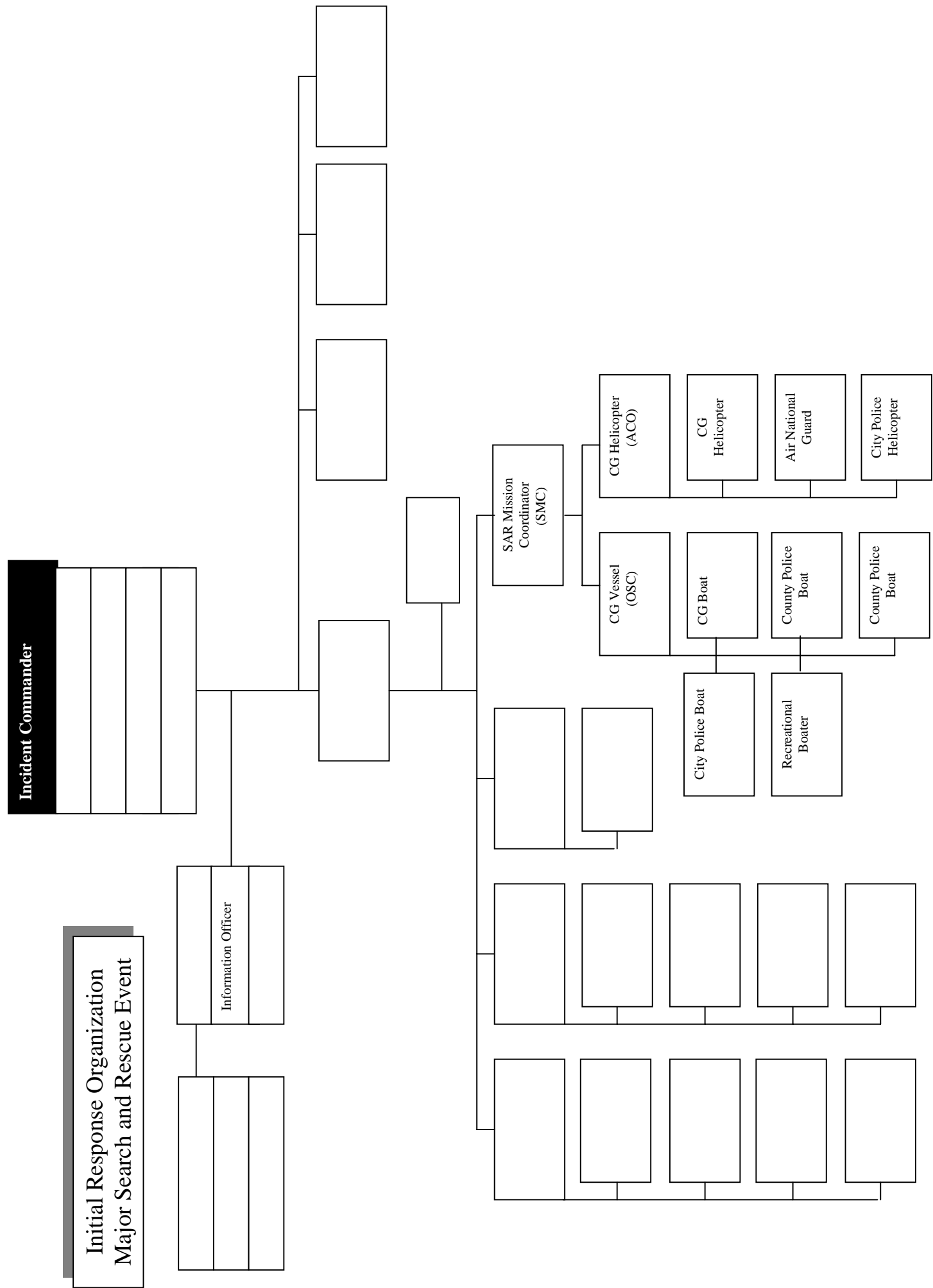
**MULTI-BRANCH ORGANIZATION (MAJOR AIRLINE CRASH)** - The UC is fully functional and staffed. UC efforts are focused on NTSB and FBI concerns. The Coast Guard is now primarily assisting with search and recovery activities, as well as providing host/landlord support. The appropriate deputies and assistants have been designated to ensure an integrated and coordinated operation at the Section, Branch, Division, and Group levels.

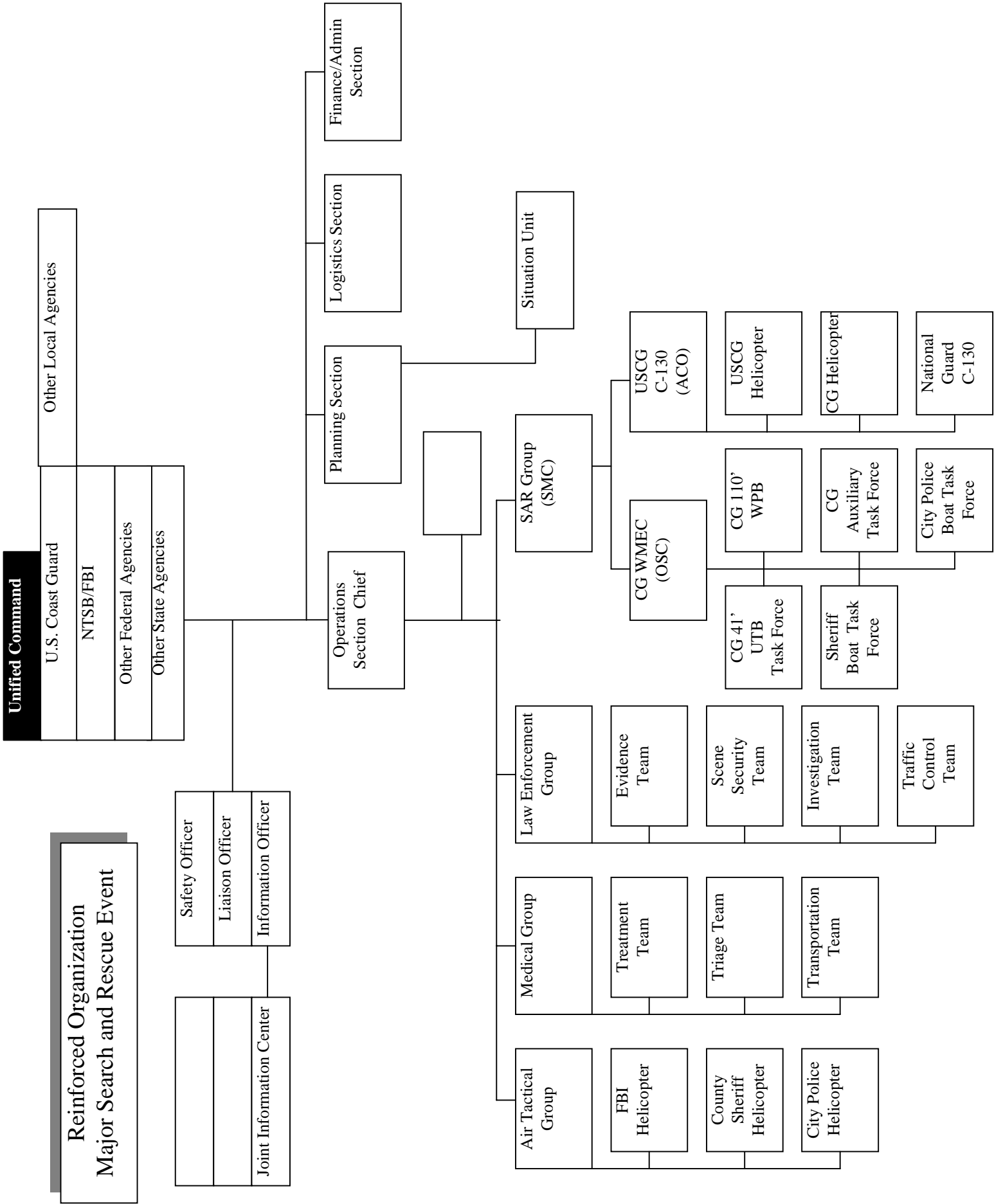
The recovery operation has been divided into three branches (i.e., Surface, Underwater, and Shore-side). Geographic divisions have been created to divide the search and recovery into manageable areas.

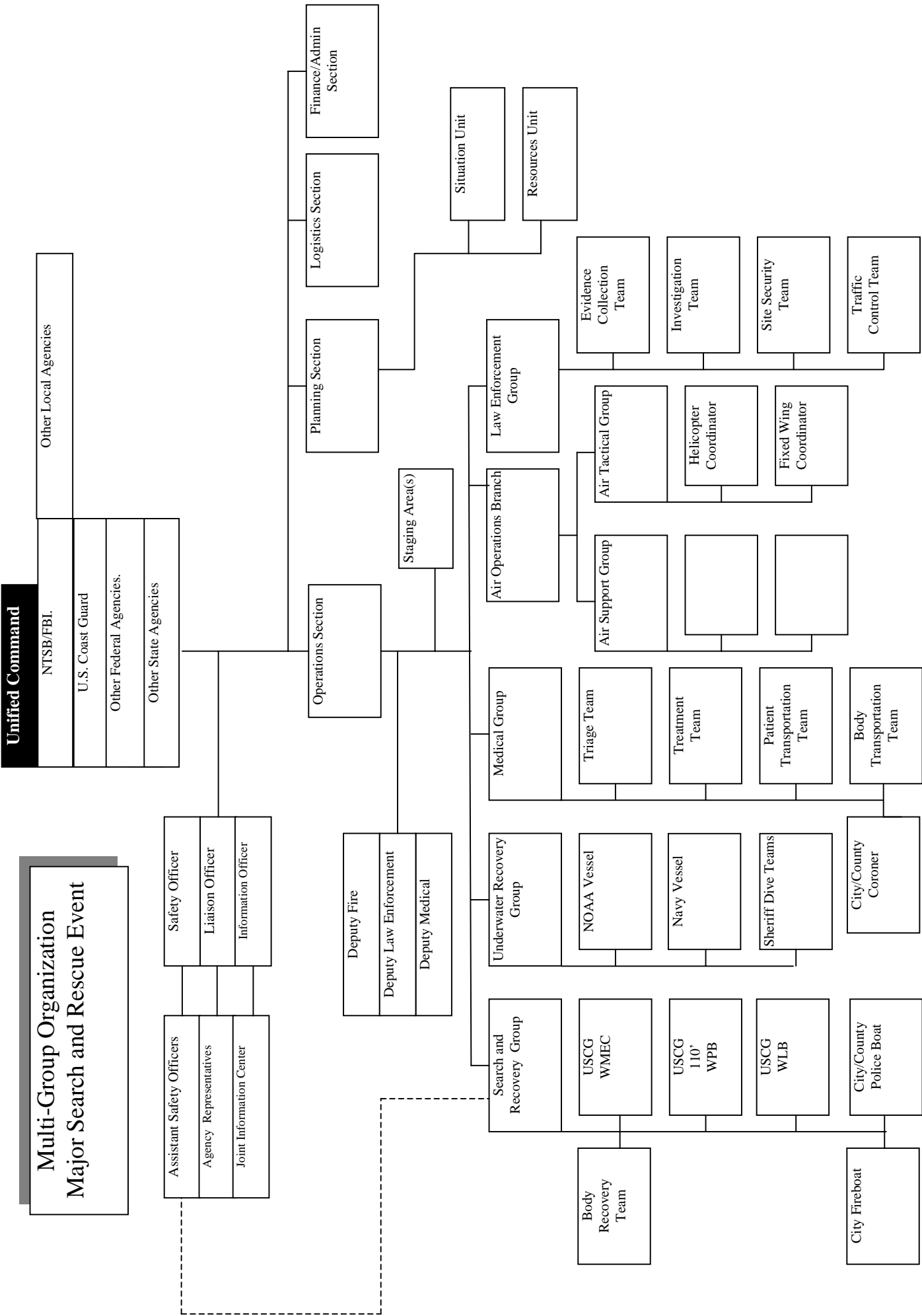


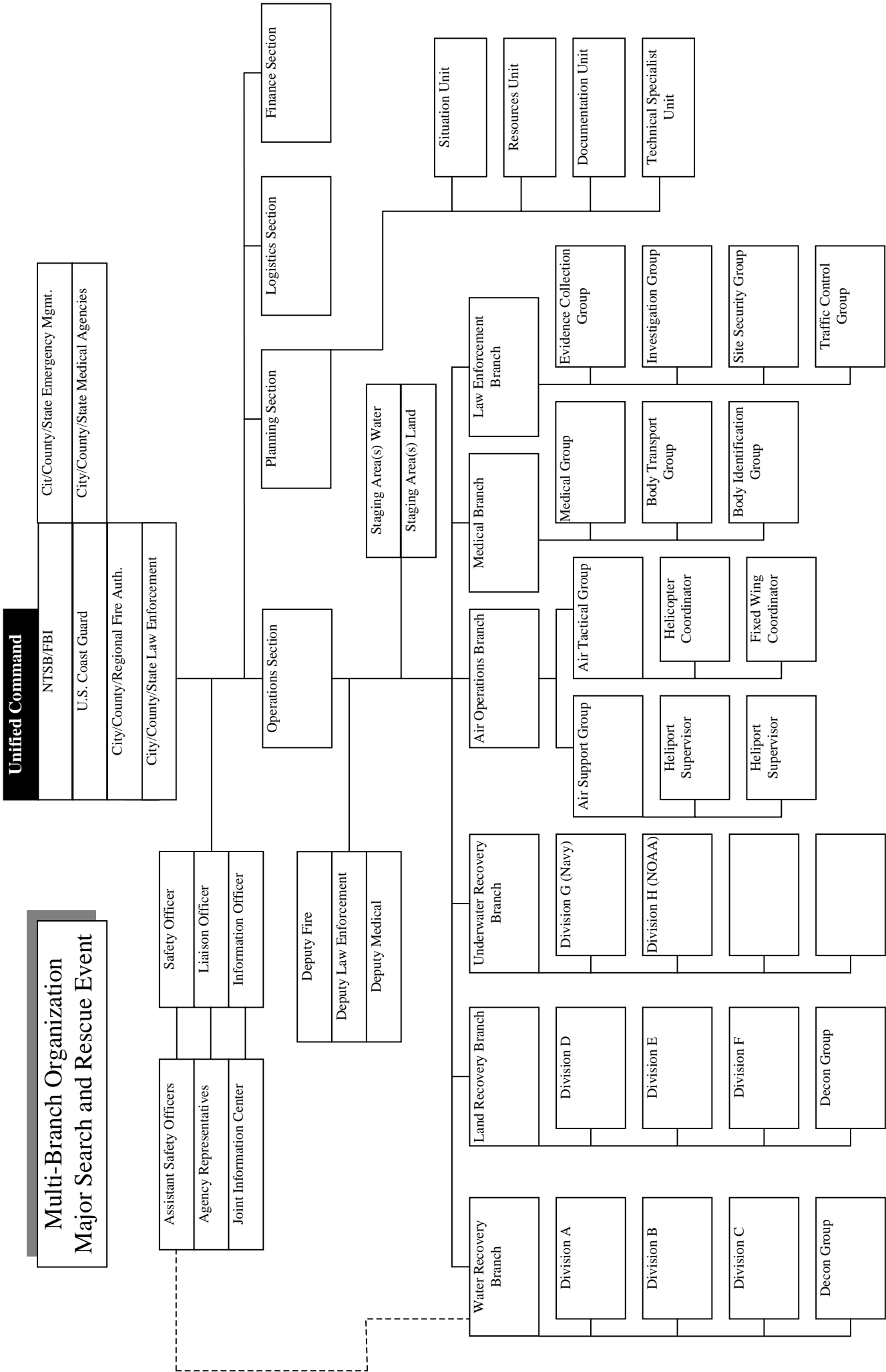
Although not shown on the organization chart, a Demobilization Unit may be established in the Planning Section to develop an Incident Demobilization Plan. This plan should include the Chaplain an/or CISM.

See Page 13-13 for an example of the Multi-Branch Organization.









## **SEARCH AND RESCUE SPECIFIC ICS POSITIONS AND TASK DESCRIPTIONS**

- Ref: (a) IMO/ICAO International Aeronautical and Maritime Search and Rescue Manual, Vol. II  
(b) U.S. National Search and Rescue Supplement to the International Aeronautical and Maritime Search & Rescue Manual  
(c) National Search and Rescue Plan, 1999  
(d) Addendum to the National Search and Research Manual (COMDTINST 16130.2B)

Only those ICS positions and tasks specific and unique to Search and Rescue (SAR) missions will be described in this section (Note: A description of SAR Response System Specific functions is also included). Persons assigned the common positions consistent with the NIIMS ICS organization should refer to Chapters 6-12 of this IMH for their position/task descriptions and checklists.

**Incident Commander (IC)** - In addition to the responsibilities outlined in Chapter 2, the IC (and the OPS if one is designated) of an incident that includes a SAR mission must recognize that the SAR Mission Coordinator (SMC) is obligated to carry out the SAR mission in accordance with references (a) – (d). The SMC (or someone designated by the SMC for this function) serves as the link between the SAR Response System and the ICS organization and is best placed at the Branch Director or Group Supervisor level (for further description and duties of the SMC, see SAR System Specific Functions below). The IC may also be designated as the SMC; however, separate individuals should carry out the IC and SMC functions if the operational tempo and/or span of control warrant it or

the IC is not thoroughly familiar with all SAR system processes. For large SAR incidents that actually or potentially include other non-SAR activities (i.e. search and recovery, salvage, investigation, pollution response, fire-fighting, etc.), carry out the following tasks as appropriate:

- a. Establish a suitable ICP, preferably at a site separate from the OPCEN, and stand-up ICS organization apart from initial response operations.
  - Assign personnel to establish the ICP and stand-up ICS organization that are not responsible for initial response actions (i.e., personnel not assigned to the Group Operation center or Rescue Coordination Center prosecuting the SAR case).
  - Establish an ICP, and accommodate to the best extent possible and as necessary the following four components: (1) at-sea command and control; (2) reconstruction, investigation and human remains transfer (primarily involving mass casualties); (3) family briefings; and (4) media briefings and access.
  - Activate/request Incident Management Assist Team (IMAT) augmentation.
  - If it is not operationally feasible for the SMC to be physically located at the ICP, the SMC should assign a liaison to the ICP to represent the SMC.
- b. Mobilize additional appropriate resources as soon as possible to stabilize the situation or assist in the recovery, salvage, pollution response, firefighting, etc. (i.e., tugs, fireboats, charter boats, salvage vessels, etc.).

- c. Have the local Coast Guard Air Station or District RCC contact the FAA to establish a Temporary Flight Restriction (TFR) for the airspace over the area of incident/operations.
- d. Ensure the following Groups are established, if necessary:
  - Medical Group to coordinate emergency medical care, including transportation to medical facilities, for Person On Board (POB) of a distressed vessel or craft (descriptions of these functions are found in Chapter 19).
  - Law Enforcement Group to coordinate law enforcement agencies to provide shore-side security of Staging Areas and the ICP, establish evidence collection and control, and assist with enforcement of safety and/or security zones (descriptions of these functions are found in Chapter 14).
- e. Immediately assign or request an IO to provide initial information to the media and establish a JIC to provide timely information and updates on progress of SAR efforts and outline of future actions.
  - Ensure that the JIC is staffed for 24-hour operations, if necessary, to meet the demands for information by the media, community groups, and public in general.
  - Be available, as the IC, to provide press briefings.
- f. Notify Next of Kin (NOK) as soon as possible and maintain daily contact with them to provide progress of SAR efforts and outline future actions. The IC shall ensure the greatest possible sensitivity in interacting with family and friends of the victims. Note: For cases involving



airline crashes, the airlines are responsible for making NOK notifications.

- For SAR incidents involving large numbers of victims, especially in cases of mass casualties or prolonged searches, ensure that lodging is centrally located and/or easily accessible for those NOK who arrive in the area. This will facilitate daily briefings.
  - Establish an area where families of victims can receive daily mission briefings. For incidents involving large numbers of POB, this should be at the place where NOK are centrally lodged.
  - If the operational tempo does not allow the IC to provide the NOK briefings personally, assign a senior officer who is disengaged operationally from the SAR incident to provide this as a primary task.
  - Provide information on mission progress and future actions to the NOK before releasing it to the media.
  - Notify NOK of decision to suspend SAR efforts at least one day prior to suspending search for missing POB.
- g. The IC may continue the SAR mission beyond the time when a case would normally be suspended due to humanitarian considerations, large number of people involved, or forecast of greatly improved search conditions.

However, Search and Rescue Units (SRUs) should not be risked when the potential for saving life is minimal, or when their use may preclude their availability for other missions.

**NOTE: Only those agencies designated as U.S. SAR Coordinators (i.e., the USCG for maritime regions) have the authority to suspend a SAR case.**

- h. When scheduling surface and air SRUs, utilize fatigue standards found in Appendix K of reference (d) and applicable policies of the operational commander.
- i. For SAR incidents involving firefighting, establish a Firefighting Group to coordinate local authorities responsible for fighting fires on vessels or at waterfront facilities. Note: This should be coordinated prior to an incident. During marine firefighting situations, CG units shall adopt a conservative response posture and focus actions on those traditional Coast Guard activities not requiring CG personnel to enter into a hazardous environment.
  - The CG Captain of the Port (COTP) is the USCG entity responsible for coordinating firefighting activities.
  - As per reference (d), CG personnel shall not actively engage in firefighting (other than fires on CG vessels) except in support of a regular firefighting agency under the supervision of a qualified fire officer. CG assistance is available only to the degree of training level and adequacy of equipment.
  - CG personnel shall not engage in independent firefighting, except to save a life or in the early stages of a fire to avert a significant threat without undue risk.

**OPERATIONS SECTION CHIEF** - In addition to the responsibilities outlined in Chapter 8, the OPS of an incident must recognize that the SMC is obligated to carry out the SAR mission in accordance with references (a) – (d). The OPS may also be designated, as and perform the function of the SMC, if operational tempo and/or span of control allow it, and the person is thoroughly familiar with all SAR system processes (for further description and duties of the SMC see SAR Response System Specific Functions below).

## **SAR SYSTEM SPECIFIC FUNCTIONS**

**SAR MISSION COORDINATOR (SMC)** - The SMC is designated (usually pre-designated) by the SAR Response System for each specific SAR mission and coordinates the overall response to a SAR incident in accordance with references (a) – (d). In the U.S. Coast Guard, the SMC designation is done by a responsible Command Center that serves as a Rescue Coordination Center (RCC) or Rescue Sub-Center (RSC). SMC responsibilities typically include:

- a. Ensure the following information, if available, is gathered upon notification of a distress situation:
  - Name or call sign of distressed vessel or craft.
  - Location or last known position of distressed vessel or craft.
  - Nature of emergency.
  - Type of assistance requested.
  - Time of last communication of distressed vessel or craft.
  - Vessel or craft description.
  - Number and condition of people on board (POB), if known.
  - Emergency equipment, if any, carried on board.

- On-scene weather; and
  - Reporting party information.
- b. Within 15 minutes of initial notification issue an Urgent Marine Information Broadcast (UMIB) for the purpose of notifying boaters and mariners in the area of the distress situation and instruct them to either keep clear of the area or to request their assistance. Re-broadcast the UMIB every 15 minutes for the first hour and every 30 minutes thereafter.
- c. Ensure that the following SAR System Response Standards are met, as found in reference (d):
- Use the VHF-FM distress net as the primary SAR controlling communications for U.S. coastal waters.
  - Initiate action within 5 minutes of initial notification
  - Have a SRU ready to proceed within 30 minutes of notification of a distress; and on-scene, at datum, or in the search area within 90 minutes of getting underway (two hour total response time). Note: This response standard may not be met in all areas over which the Coast Guard has responsibility for SAR coordination, including vast areas of open ocean and remote areas with little or no SAR demand.
  - Use of Computer Assisted Search Planning (CASP) for planning guidance for all cases when the duration of the incident could exceed 24 hours, and there is uncertainty concerning the incident time, location, and type of search object(s).
  - Use of Automated Mutual-Assistance Vessel Rescue (AMVER) System for identification of rescue resources for all cases involving incidents on the high seas.

- d. If two or more resources are en route or on-scene, the SMC may assign an OSC to manage the SAR mission at the scene if doing so stands to improve the OSC. The OSC may be assigned from the Coast Guard or from some other agency. However, the OSC should be the best-qualified and most capable person or unit on-scene, taking into consideration SAR experience, communications capabilities, and endurance of the facility. The SMC may assign multiple OSCs to facilitate SAR operations in a large area, using multiple air and surface assets, or with a lack of communications link between air and surface assets. (For a further description and duties of the OSC, see below).
- The SMC should assign on-scene communication channels to be used by the OSC and participating SRUs.
- e. For a SAR incident that requires search planning and operations, ensure the following tasks are carried out in accordance with references (a)-(d):
- Determine the search object(s).
  - If possible, determine datum, which is the most probable location of the search object, corrected for movement over time. This requires a time and last reliable position of the search object based on last know position, track, or general area of operations.
  - Determine the search area, which is the geographic area most likely to contain the search object.
  - Determine available assets.
  - Develop a Search Action Plan that will cover as much of the search areas as possible with a reasonable Probability of Success (POS) using available resources. The Search Action Plan should include the situation, description of the search object(s), search patterns and assignments,

prescribed on-scene communication channels, and other coordination instructions.

- If the search is unsuccessful, re-evaluate the information and (1) modify the search plan; reassign SRUs, if necessary; and conduct a subsequent search or (2) suspend search operations if further efforts are unlikely to be successful.
- f. For a SAR incident that progresses to rescue planning and operations, ensure the following tasks are carried out:
  - Determine best rescue method within resource capabilities and environmental limitations.
  - Determine and coordinate available, suitable resources to effect the rescue.
  - Coordinate the need for and method of delivery of supplies and other supporting equipment.
  - If necessary, request that the OPS or IC mobilize additional appropriate resources to assist in the rescue.
  - Select safe delivery point suitable for receiving survivors (and/or human remains) and that is easily accessible for transporting to medical, processing, lodging and/or morgue facilities. Note: The selected site should be coordinated via the OPS or IC.
  - Account for all passengers and crew of distressed vessel or craft.
  - Ensure appropriate fixed-wing escorts are utilized for long range helicopter rescue operations.
  - If necessary, utilize USAF Pararescueman (PJ) Technical Specialists, particularly for remote areas (see description of PJ Technical Specialists below).
  - Ensure rescue personnel are thoroughly briefed on the rescue plan.

- g Ensure all documentation from the SAR mission, to include copies of SITREPs, logs, SAR Action Plans, photo/video film, etc., are provided to the Documentation Unit Leader.

**On-Scene Coordinator (OSC)** - The OSC coordinates the SAR mission on-scene using the resources made available by the IC (via the SMC) and should safely carry out the SAR Action Plan in accordance with references (a) - (d). The OSC may also serve as a Branch Director or Group Supervisor to manage on-scene operations other than SAR, particularly after the SAR mission is concluded and other missions take precedence, such as search and recovery. OSC responsibilities typically include:

- a. Establish and maintain communications with the SMC.
- b. Assume operational control and coordination of all SRUs assigned until relieved or mission is completed.
  - Establish and maintain communications with all SRUs using assigned on-scene channels.
  - Require all aircraft to make “operations normal” reports to the OSC every 15 minutes (30 minutes for a multi-engine fixed-wing). Position reports are not required for surface SRUs as long as they remain in their assigned search areas (although positions should be obtained periodically and plotted so that their navigation can be verified).
  - Establish a common altimeter setting for all on scene aircraft (this may be done by the senior pilot if a Surface Unit is the OSC).

- Obtain necessary information from arriving SRUs, provide initial briefing and search instructions, and provide advisory air traffic service to aid pilots in maintaining separation from one another.
- c. Carry out SAR action plans, and modify plans to cope with changing on-scene conditions advising the SMC of all major changes.
  - Receive and evaluate all sighting reports, and divert SRUs to investigate sightings.
  - Obtain search results from departing SRUs.
- d. Submit sequentially numbered situation reports (SITREPs) to the SMC at regular intervals. When the OSC is relieved, the new OSC continues the SITREP numbering sequence. SITREP information and formats are further detailed in references (a) and (d).

## **TECHNICAL SPECIALISTS**

### **PARARESCUEMAN (PJ) TECHNICAL SPECIALIST -**

These members of the USAF are specialists in the rescue, stabilization, and recovery of personnel from remote areas, often under extremely hazardous conditions, including combat. PJs provide emergency medical treatment (at the paramedic level) necessary to stabilize and evacuate injured personnel.

- PJs often provide worldwide search, rescue and recovery assistance associated with aircraft accidents, disaster relief, humanitarian evacuation, and contingency landing support for NASA missions.
- If deployed from fixed-wing assets, they jump with a Rigged Alternate Method Zodiac (RAMZ), providing them with a small boat to help facilitate rescues.



**FLIGHT SURGEON** - The flight surgeon is a physician that has attended a special course that has prepared them to provide medical support in the aviation community. They are qualified to fly or provide medical consultation.